CLAIMS

1. A composition comprising hydrocarbon oil and substituted lignin, wherein the lignin has been substituted by esterification and acetylation of the hydroxyl groups, wherein the hydroxyl groups are esterified with a C14 or longer fatty acid at a degree of substitution of at least 20%, wherein the hydroxyl groups are acetylated at a degree of substitution of at least 20% and wherein at least 90% of the hydroxyl groups of the lignin is substituted by esterification and acetylation; and

   wherein the composition is essentially free from free fatty acid and wherein the total acid number (TAN) of the composition is less than 60mg KOH/g substituted lignin.

2. The composition according to claim 1 wherein the TAN is less than 50, preferably less than 45, or less than 40, or less than 25, or less than 15, or less than 5 mg KOH/g substituted lignin.
3. The composition according to claim 1 or 2 wherein the lignin is esterified at a degree of substitution of 25-45% and acetylated at a degree of substitution of 55-75%.
4. The composition according to claim 1 or 2 wherein the lignin is esterified at a degree of substitution of 55-75% and acetylated at a degree of substitution of 25-45%.
5. The composition according to any one of claims 1 to 4 wherein the at least 95% of the hydroxyl groups of the lignin is substituted, or at least 98%, or at least 99%, or 100%.
6. The composition according to any one of the preceding claims wherein the concentration of the substituted lignin in the composition is 2 weight% or more, or 10 wt% or more, or 20 wt% or more, or 30 wt% or more, or 40 wt% or more.
7. The composition according to any one of the preceding claims wherein the composition comprises 20 weight% or more, or 40 weight% or more, or 60 weight% or more, or 80 weight% or more of hydrocarbon oil and wherein the hydrocarbon oil is preferably gas oil such as a light gas oil and preferably wherein the amount of solvent is less than 5wt%, or less than 3wt%, or less than 1wt%, or less than 0.5wt%.
8. The composition according to any one of the preceding claims wherein the fatty acid is oleic acid, stearic acid or tall oil fatty acids.

9. The composition according to any one of the preceding claims wherein the total amount of metals is less than 50ppm.
10. A method of preparing the composition according to any one of claim 1 to 9 wherein the method comprises:
    a. Providing lignin preferably solvent extracted lignin, a C14 or longer fatty acid, a solvent, a nitrogen containing aromatic heterocycle catalyst, hydrocarbon oil and acetic anhydride;
    b. Mixing the fatty acid with an molar excess of acetic anhydride forming a first mixture;
    c. Heating the first mixture forming fatty acid anhydride and acetic acid;
    d. Removing the formed acetic acid;
    e. Mixing the lignin, the fatty acid anhydride, the solvent and the catalyst forming a second mixture;
    f. Heating the second mixture forming esterified lignin and free fatty acid;
    g. Adding acetic anhydride to the second mixture comprising esterified lignin and free fatty acid forming a third mixture wherein the amount of acetic anhydride is in molar excess to the free fatty acid;
    h. Heating the third mixture forming the substituted lignin and acetic acid;
    i. Removing the formed acetic acid and optionally any excess of acetic anhydride;
    j. Mixing the substituted lignin with the hydrocarbon oil.
11. The method according to claim 10 wherein the catalyst is 1-methyl-imidazole or 4-methyl-pyridine or a mixture thereof and wherein the solvent is preferably selected from pyridine, 4-methyl-pyridine or a mixture thereof.
12. The method according to any one of claims 10 to 11 wherein the first mixture is heated to at least 120°C.
13. The method according to any one of claims 10 to 12 wherein the second mixture is heated to at least 180°C and wherein the third mixture is preferably refluxed.
14. The method according to any one of claims 10 to 13 wherein the solvent and the catalyst is removed prior to or after the addition of the hydrocarbon oil, preferably by evaporation or distillation.
15. The method according to any one of claims 10 to 14 wherein the amount of fatty acid anhydride is one equivalence or less to the amount of hydroxyl groups on the lignin and wherein the amount of fatty acid anhydride preferably is less than 0.9 equivalence to the amount of hydroxyl groups on the lignin, or less than 0.8 equivalence.